

PROJECT DESCRIPTION
NORTHWEST MANEUVER AREA
JEFFERSON, DESCHUTES, COOK, GRANT, LAKE, HARNEY AND
KLAMATH COUNTIES OREGON
PROJECT NO. F100R020800

1. INTRODUCTION

As directed by the Huntsville Division, the Portland District conducted a site inspection of the former Northwest Maneuver Area on 8 - 12 and 15 - 17 August 1988. The purpose of the investigation was to assess the presence of unsafe debris, hazardous and toxic waste contamination and unexploded ordnance.

2. PROJECT DESCRIPTION

A project is proposed at this site which includes unexploded ordnance disposal. The project consists of locating, removing, and disposing of unexploded practice bombs, mortar, bazooka and rocket rounds. The unexploded ordnance are potential sources for physical hazards and environmental contamination.

3. DESCRIPTION OF SITE

The Northwest Maneuver Area Site was used by the IV Corps of the U.S. Army in September and October of 1943 to maneuver troops. The project site is roughly a large triangle, encompassing all or portions of Jefferson, Deschutes, Cook, Grant, Lake, Harney and Klamath Counties in Oregon. The area is currently owned by the Dept. of Agriculture, U.S. Forest Service; Dept. of the Interior, Bureau of Land Management; State; County and private interests. No permanent structures were constructed. However, there have been many reportings of DOD ordnance being found. The investigation documented nine reports of ordnance being found on the site. A description of these reports follows:

1. Lakeview District Office, Bureau of Land Management (BLM). Report of anti personnel fragmentation bomb found approximately 1986 near Silver Lake.
2. Lakeview District Office, BLM. Ordnance reported to have been found in Lake Abert area approximately 15 years ago.
3. Prineville District Office, BLM. Ordnance reported to have been found in Millican area (time frame unknown).
4. Deschutes County Emergency Services. Reported ordnance found in the sand dunes approximately 4 miles west and one mile north of Alfalfa (time frame unknown).
5. Deschutes County Emergency Services. Reported artillery round found west of Sunriver, Oregon.

6. Lake County Deputy Sheriff. Reported in the week of 14-18 March 1988; a practice bomb was found in the sand dunes approximately 14 miles north and east of Christmas Valley.

7. Lake County Deputy Sheriff. Reported that in the summer of 1987, about six miles west and five miles north of Christmas Valley, a land mine was detonated when a wheel of a trailer backed onto it. The Army later found 10 other land mines in the draw of a small rocky ridge. Another land mine was found later. A total of 12 land mines were found in the area.

8. Sunriver Nature Center. Spent mortar and rocket rounds are still occasionally found near a cliff northwest of the Sunriver airstrip.

9. Bend District Office, U.S. Forest Service. A bazooka round was located approximately 1 1/2 mile west of Sunriver.

A Risk Assessment Code (RAC) of 4 has been computed for this site. The RAC was determined based on a hazard severity value of 10 (marginal) and a hazard probability value of 19 (occasional).

SITE SURVEY SUMMARY SHEET
FOR
PROJECT NO. F100R020800

SITE NAME: Northwest Maneuver Area

LOCATION: In portions of Jefferson, Deschutes, Cook, Grant, Lake, Harney and Klamath Counties, Oregon.

DESCRIPTION OF PROBLEM: As a result of the site investigation it appears there is a potential hazard to the public from remaining unexploded ordnance.

SITE HISTORY: In September and October 1943, the U.S. Army acquired by special use permits from DOA and DOI 6,890,880.08 acres for maneuvers. Already held under various agreements by other DOD installations were 1,109,119.92 acres. The total acreage available for maneuvers was 8,000,000 acres. The special use permits were relinquished in February 1945. Lands which were held by other DOD installations were disposed of at later dates.

AVAILABLE STUDIES AND REPORTS: None. The information was gathered from maps, real estate documents, on site investigations, historical documents, and interviews.

CATEGORY OF HAZARD: Unexploded ordnance

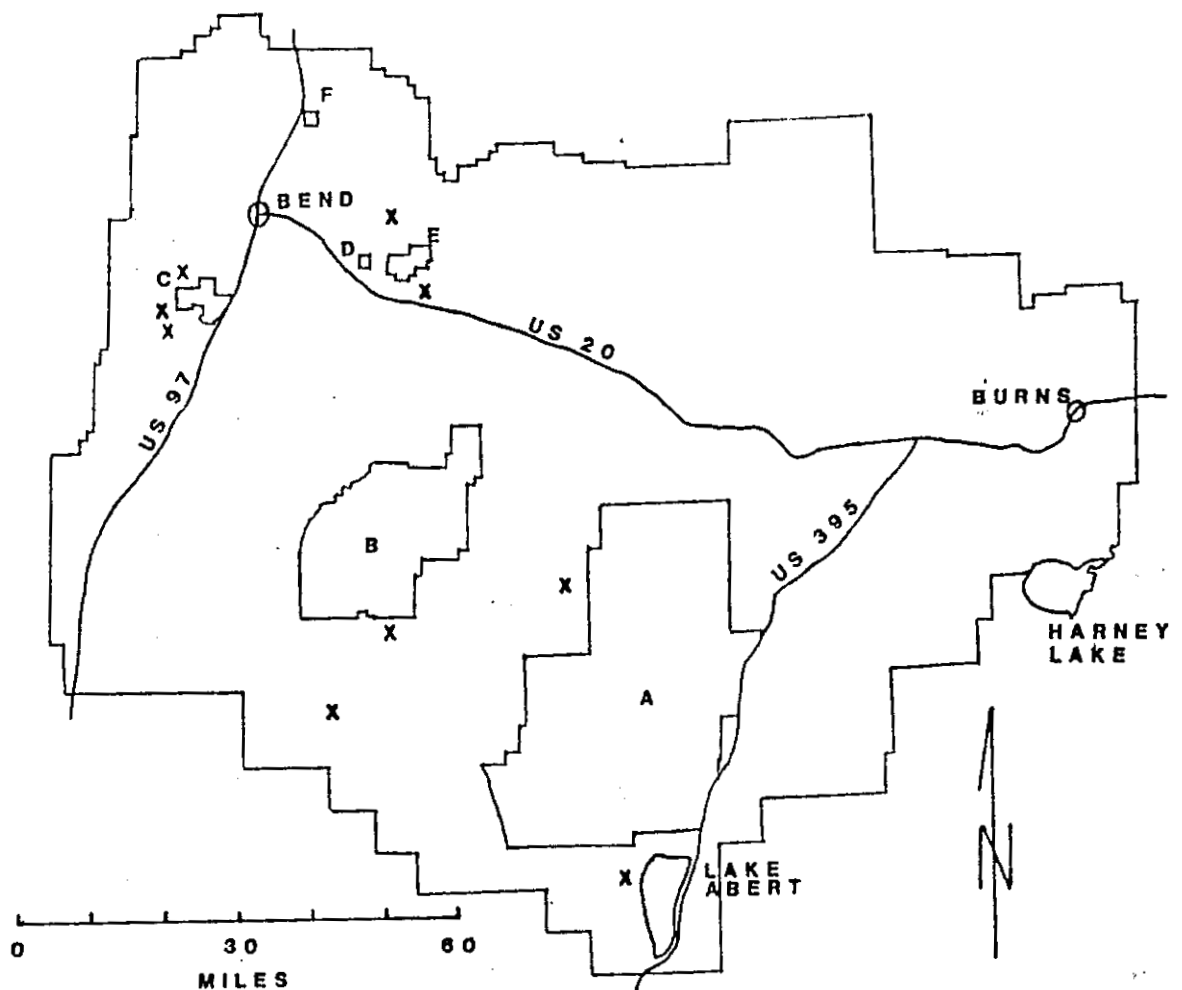
BASIS OF DETERMINATION OF DOD RESPONSIBILITY: The site was used in September and October 1943 by the IV Corps for maneuvers to prepare its troops for war.

POC/DISTRICT: John Todd, CENPP-EN-DC, (503) 326-6491, Portland District DERP Project Manager.

STATUS: The property is currently owned by the Department of Agriculture, U.S. Forest Service, Department of the Interior, Bureau of Land Management, private, state, and counties.

DESCRIPTION OF PROPOSED REMEDIAL ACTION: The proposed Project consists of locating, removing and disposing of unexploded ordnance.

ESTIMATED COST: \$ 25,000,000

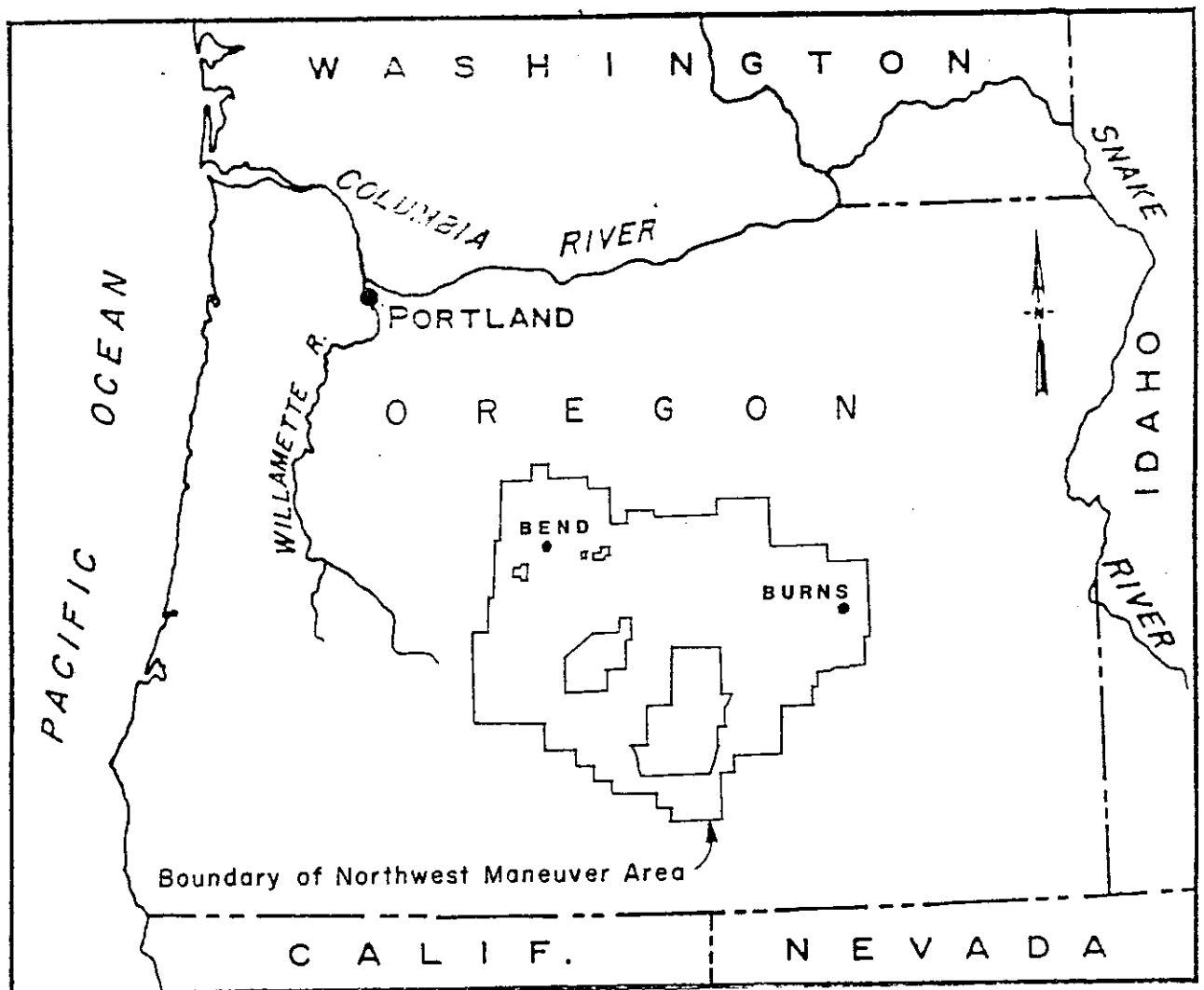


NORTHWEST MANEUVER AREA

Project No. F100R020800

- A CENTRAL OREGON AIR TO AIR GUNNERY RANGE
- B FORT ROCK MANEUVER AREA
- C CAMP ABBOT
- D REDMOND PRECISION BOMBING RANGE
- E REDMOND AIR TO GROUND GUNNERY RANGE
- F REDMOND ARMY AIRFIELD

x Location of Reported Ordnance



REGIONAL MAP



NORTHWEST MANEUVER AREA

Project No. F100R020800

DEFENSE ENVIRONMENTAL RESTORATION PROGRAM (DERP)
FOR FORMERLY USED SITES
FINDINGS AND DETERMINATION OF ELIGIBILITY
JEFFERSON, DESCHUTES, COOK, LAKE, GRANT,
HARNEY, AND KLAMATH COUNTIES, OREGON
PROJECT NUMBER F100R020800

FINDINGS OF FACT

1. An ordnance disposal project is proposed for the former Northwest Maneuver Area. The proposed project will include the location and disposal of DOD-deposited ordnance. The ordnance proposed for disposal are potential sources for physical hazards and environmental contamination.
2. Authorization for the War Department (DOD) to acquire land for Northwest Maneuver Area to maneuver over the land (not a lease or transfer) was given in September 1943. There were 2,248,140 acres of land transferred from Department of Agriculture (DOA) to the War Department by use permit in September 1943. There were 4,642,740.08 acres of land transferred from Department of Interior (DOI) by use permit in October 1943. Separate DOD installations within the Northwest Maneuver Area accounted for an additional 1,109,119.92 acres. The total acreage available for maneuvers was 8,000,000 acres.
3. The site was used as an area for maneuvers by the Fourth Corps of the U.S. Army. Three divisions of over 10,000 men, officers and warrant officers were supported by medical units, tanks, tank destroyers, engineers, anti-aircraft units, and air support from the Redmond Army Air Field and Burns Army Air Field. No permanent structures were constructed during DOD use of the lands.
4. The DOD relinquished 2,248,140 acres of land to DOA and 4,642,740.08 acres of land to DOI in February 1945. A total of 1,109,119.92 acres remained under control of the separate installations and were disposed of at later dates.
5. The eastern portion of the site is used for cattle grazing and the western portion supports a dense pine forest. Various portions of the site are used by the public for recreational purposes. The investigation documented nine reports of unexploded practice bombs, land mines, mortar, bazooka, and rocket rounds being found on the site. The deposited ordnance appear to have been abandoned by the DOD. There is no other known evidence of hazardous or toxic waste resulting from DOD use of the site.

DETERMINATION

Based on the foregoing Findings of Fact, the site has been determined to have been formerly used by the DOD. Moreover, it is determined that an environmental restoration project, to the extent set out herein, is an appropriate undertaking within the purview of the Defense Environmental Restoration Program, established under 10 U.S.C. 2701 et seq., for the reasons stated above.

Date

LLOYD A. DUSCHA, P.E.
Deputy Director
Directorate of Engineering
and Construction

(9-159)

Site Name Northwest Maneuver Area
 Site Location Central Oregon
 DERP Project # FLOOR 20800
 RAC 4

Rater's Name John Todd
 Organization CENPP-EN-DC

Revised: 14 Aug 89

APPENDIX A
 RISK ASSESSMENT PROCEDURES FOR
 ORDNANCE AND EXPLOSIVE WASTE (OEW)

OEW RISK ASSESSMENT:

The OEW risk assessment is based upon documented evidence consisting of records searches, reports of Explosive Ordnance Detachment actions, and field observations, interviews, and measurements. These data are used to assess the risk involved based upon the hazards identified at the site. The risk assessment is composed of two factors, hazard severity and hazard probability.

Any field activities should be made with the assistance of qualified EOD personnel.

Part I. Hazard Severity. Hazard severity categories are defined to provide a qualitative measure of the worst credible mishap resulting from personnel exposure to various types and quantities of unexploded ordnance items.

TYPE OF ORDNANCE

A. Conventional Ordnance and Ammunition

	YES VALUE	NO VALUE	VALUE
Small Arms (.22 cal - 20mm)	4	0	<u>0</u>
Medium/Large Caliber (over 20mm)	10	0	<u>10</u>
Ammunition, Inert (Contains No Explosives)	0	0	<u>0</u>
Ammunition, Blank or Practice	4	0	<u>0</u>
Bombs, Explosive	10	0	<u>0</u>
Bombs, Practice, Fused	6	0	<u>6</u>
Grenades, Mines	10	0	<u>10</u>
Grenades, Mines, Practice, Fused	6	0	<u>6</u>

	<u>YES</u> VALUE	<u>NO</u> VALUE	VALUE
Detonators, Blasting Caps	10	0	<u>0</u>
Rockets, Missiles	10	0	<u>10</u>
Demolition Charges	8	0	<u>0</u>

Conventional Ordnance and Ammunition ORS Value (Maximum of 10). 10

B. Pyrotechnics

	<u>YES</u> VALUE	<u>NO</u> VALUE	VALUE
White Phosphorus	5	0	<u>0</u>
Pyrolusite	4	0	<u>0</u>
Flares	2	0	<u>0</u>
Smoke Rounds and Bombs	1	0	<u>0</u>

Pyrotechnics Value (Maximum of 5). 0

C. Bulk High Explosives (Bulk explosives not an integral part of conventional ordnance).

	<u>YES</u> VALUE	<u>NO</u> VALUE	VALUE
Primary or Initiating Explosives (Lead Styphnate, Lead Azide, Nitroglycerin, Mercury Azide, Mercury Fulminate, etc.)	10	0	<u>0</u>
Booster, Bursting or Fuse Explosives (PETN, Compositions A, B, C, Tetryl, TNT, RDX, HMX, HBX, Black Powder, etc.)	5	0	<u>0</u>
Military Dynamite	5	0	<u>0</u>
Less Sensitive Explosives (Ammonium Nitrate, Favier Explosives, etc.)	3	0	<u>0</u>

High Explosives Value (Maximum value of 10). 0

D. Propellants

	YES VALUE	NO VALUE	VALUE
Solid or Liquid Propellants	6	0	<u>0</u>

E. Chemical Weapons/Agents

	YES VALUE	NO VALUE	VALUE
Toxic Chemical Warfare Agents (GB, VX, H, HD, BZ, __, etc.)	25	0	<u>0</u>
Vomiting Agents (DA, DM, DC, etc.)	10	0	<u>0</u>
Tear Agents (CNS, CNB, BBC, CS, etc.)	5	0	<u>0</u>

Chemical Weapons Value (Maximum 25) 0

Total Ordnance and Explosive Waste Characteristics Value (Total = 10
A + B + C + D + E with a Maximum value of 56).

TABLE 1

HAZARD SEVERITY

Description	Category	Value
CATASTROPHIC	I	<u>>21</u>
CRITICAL	II	<u>>13 <21</u>
MARGINAL	III	<u>> 5 <13</u> ←
NEGLIGIBLE	IV	<u>< 5</u>

* Apply Hazard Severity to Table 3.

TABLE 2

HAZARD PROBABILITY

Description	Level	Value
FREQUENT	A	≥27
PROBABLE	B	≥21 <27
OCCASIONAL	C	≥15 <21 ←
REMOTE	D	≥ 8 <15
IMPROBABLE	E	<8

* Apply Hazard Probability to Table 3.

Part III. Risk Assessment. The risk assessment value for this site is determined using the following Table 3. Enter with the results of the hazard probability and hazard severity values.

TABLES 1 AND 2

HAZARD SEVERITY - 10
(from Table 1)

HAZARD PROBABILITY - 19
(from Table 2)

TABLE 3

Probability Level		FREQUENT A	PROBABLE B	OCCASIONAL C	REMOTE D	IMPROBABLE E
Severity Category:						
CATASTROPHIC	I	1	1	2	3	4
CRITICAL	II	1	2	3	4	5
MARGINAL	III	2	3	4	4	5
NEGLIGIBLE	IV	3	4	4	5	5

RISK ASSESSMENT CODE (RAC)

- RAC 1 Imminent Hazard - Emergency action required to mitigate the hazard or protect personnel (i.e., Fencing, physical barrier, guards, etc.).
- RAC 2 Action required to mitigate hazard or protect personnel. Feasibility study is appropriate.
- RAC 3 Action required to evaluate potential threat to personnel. High priority confirmation study is appropriate.
- RAC 4 Action required to evaluate potential threat to personnel. Confirmation study is appropriate.
- RAC 5 No action required.

Justification. In narrative form, summarize the documented evidence that supports this risk assessment.

Risk assessment based on documented evidence of 9 reports obtained through interviews with Bureau of Land Management, Lakeview and Prineville Districts; U.S. Forest Service, Bend District; Deschutes County Emergency Services, and the Lake County Deputy Sheriff.

Part II. Hazard Probability. The probability that a hazard has been or will be created due to the presence and other rated factors of unexploded ordnance or explosive materials on a formerly used DOD site.

AREA, EXTENT, ACCESSIBILITY OF CONTAMINATION

A. Locations of Contamination

	<u>YES</u> VALUE	<u>NO</u> VALUE	VALUE
Within Tanks, Pipes, Vessels or Other confined locations.	5	0	<u>0</u>
On the surface or within 3 feet.	5	0	<u>5</u>
Inside walls, ceilings, or other parts of Buildings or Structures.	4	0	<u>0</u>
Subsurface, greater than 3 feet in depth.	3	0	<u>0</u>

Value for location of UXO. (Maximum
Value of 5).

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B. Distance to nearest inhabited locations or structures likely to be at risk from OEW site (roads, parks, playgrounds, and buildings).

<u>Distance to Nearest Target</u>	VALUE
Less than 1250 feet	5
1250 feet to 0.5 miles	4
0.5 miles to 1.0 mile	3
1.0 mile to 2.0 miles	2
2.0 miles to 5.0 miles	1
Over 5.0 miles	0

Distance to Persons Value (Maximum Value of 5).

3

C. Numbers and types of Buildings within a 2 mile radius measured from the hazardous area, not the installation boundary.

Number of Buildings	VALUE
0	0
1 to 10	1
11 to 50	2
51 to 100	3
101 to 250	4
251 or Over	5

Number of Buildings Value (Maximum Value of 5).

1

D. Types of Buildings

	VALUE
Educational, Child Care, etc.	5
Residential, Hospitals, Hotels, etc.	5
Commercial, Shopping Centers, etc.	5
Industrial Warehouse, etc.	4
Agricultural, Forestry, etc.	3
Detention, Correctional	2
Military	1
No Buildings	0

Types of Buildings Value (Maximum Value of 5).

5

E. Accessibility to site refers to the measures taken to limit access by humans or animals to ordnance and explosive wastes. Use the following guidance:

Barrier	Assigned Value
A 24-hour surveillance system (e.g., television monitoring or surveillance by guards or facility personnel) which continuously monitors and controls entry onto the facility;	0

or

Barrier	Assigned Value
An artificial or natural barrier (e.g., a fence combined with a cliff), which completely surrounds the facility; and a means to control entry, at all times, through the gates or other entrances to the facility (e.g., an attendant, television monitors, locked entrances, or controlled roadway access to the facility).	0
Security guard, but no barrier	1
A barrier, (any kind of fence) but no separate means to control entry	2
Barriers do not completely surround the facility	3
No barrier or security system	5
Accessibility Value (Maximum Value of 5).	<u>5</u>

F. Site Dynamics - This deals with site conditions that are subject to change in the future, but may be stable at the present. Examples would be excessive soil erosion by beaches or streams, increasing land development that could reduce distances from the site to inhabited areas or otherwise increase accessibility.

	VALUE
None Anticipated	0
Expected	5
(Maximum Value of 5)	<u>0</u>

Total value for hazard probability.
Sum of Values A through G.
(Not to exceed 35). Apply this value
to Hazard Probability Table 2 to determine
Hazard Level.

19